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The Anthiine Fish, *Pseudanthias taeniatus*, from Hachijo Island and the Coast of Izu, Japan

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I have recently examined six small anthiine fish obtained off Hachijo Island and another specimen on the coast of Izu Peninsula. They seem referable to *Leptanthias kashiwae* Tanaka (1918), a species in which only the holotype has hitherto been known. Katayama (1960) regarded the species as a synonym of *Pseudanthias taeniatus* (Klunzinger), however, he examined no material. Because of the rather scanty morphological information so far available on the species, a full description is made, based on the material presently examined. Sexual dimorphism and posible protogynous hermaphroditism are also discussed.

Pseudanthias taeniatus (Klunzinger)
Kashiwa-hanadai
(Fig. 1)

Anthias taeniatus Klunzinger, 1884: 9, pl. 3, fig. 2 (Red Sea); Smith, 1961: 362, fig. 1 (Pinda, Mozambique).

Leptanthias kashiwae Tanaka, 1918: 525, pl. 138, fig. 387 (Kashiwa-jima, Kochi Prefecture, Japan).

Anthias cichlops (not of Bleeker); Smith, 1951: 57, fig. 4 (Inhaca Island); Smith, 1953: 578 and Smith, 1955a: 338 (Mozambique); Smith, 1955b: 689 (Aldabra).

Pseudanthias taeniatus; Katayama, 1960: 158 (no specimen, discussion).

Materials: ZUMT 54144 (Zoological Department, University Museum, the University of Tokyo), standard length 62 mm (total length 91 mm), male; 4 specimens, ZUMT 54145～54148, 41 mm～56mm (45 mm～76mm), female; Katayama's Cat. No. 5733, 51 mm (69 mm), female; all collected by Minoru Asai on August, 1975, at a depth of about 25 m, O-chogahama, Nakanogo, Hachijo Island; MBM 1016 (Masuda's Cat. No.), 73 mm (99 mm), male, collected by Hajime Masuda on Nov. 26, 1977, from the coast of Izu Peninsula.

Description. The counts and proportional measurements of body parts are shown in Table 1. Body elongate, compressed; dorsal and ventral contours evenly and gently curved. Mouth moderately large, oblique and protractile, lower jaw slightly projecting beyond the upper when mouth closed. Maxillary expanding distally, reaching below posterior border of pupil. Interorbital region strongly convex, about equal to eye diameter. Nostrils two, close together, directly in front of eye; anterior nostril with a posterior flap, posterior one crescent in shape. Teeth on upper jaw in two series, outer ones canine-like, inner ones minute, in a narrow band; a pair of canines on each side of the tip of upper jaw and posteriorly another pair of canines directed backward; lower jaw with small teeth;

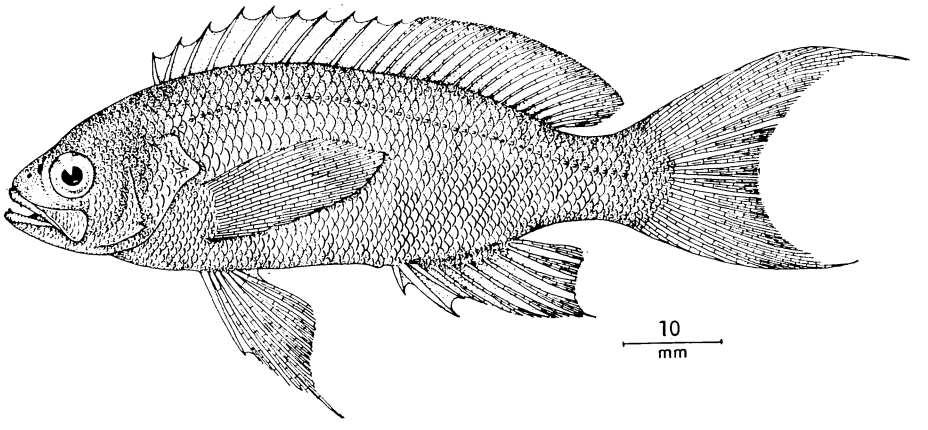

Fig. 1. *Pseudanthias taeniatus* (Klunzinger), 62 mm in SL, ZUMT 54144.

Table 1. Counts and proportional measurements in *Pseudanthias taeniatus*.

Catalogue No.	ZUMT 00000	MBMI 016	K5733	ZUMT 00000	ZUMT 00000	ZUMT 00000	ZUMT 00000
Sex	♂	♂	♀	♀	♀	♀	♀
Standard length (mm)	62	73	51	48	56	46	41
Total length (mm)	91	99	69	61.5	76	61	54
Dorsal rays	X, 17	X, 16	X, 16	X, 16	X, 16	X, 16	X, 16
Anal rays	III, 7	III, 7	III, 7	III, 7	III, 7	III, 7	III, 7
Pectoral rays	20	19	19	19	19	19	19
Gill-rakers	10+25	—	10+25	10+23	10+25	10+24	9+24
Pored scales in lateral line	49	49	49	49	50	49	49
Pyloric coeca	0	—	0	0	0	0	0
In standard length							
Head length	3.10	3.48	3.00	3.20	3.11	3.01	3.04
Depth	3.02	2.98	2.91	3.00	3.11	2.99	3.04
In head length							
Snout length	4.44	3.82	4.25	4.28	4.19	3.83	5.40
Eye diameter	4.00	4.20	3.77	3.75	3.91	3.83	3.86
Interorbital space	3.57	3.23	3.40	3.40	4.09	3.83	3.75
Upper jaw length	2.22	2.33	2.23	2.30	2.57	2.35	2.29
Postorbital length of head	1.88	1.83	1.78	1.97	1.94	1.91	1.93
Length of caudal peduncle	1.66	1.40	1.41	1.30	1.50	1.53	1.63
Depth of caudal peduncle	2.51	2.23	2.42	2.50	2.57	2.55	2.41
Pectoral fin length	1.11	1.05	1.13	1.15	1.13	1.09	1.05
Pelvic fin length	1.05	1.11	1.34	1.36	1.29	1.47	1.35
Length of longest dorsal spine	2.59	2.53	2.83	2.94	3.00	2.83	3.00
〃 last dorsal spine	2.73	2.88	3.03	3.00	2.90	2.89	3.00
〃 longest dorsal ray	2.22	2.47	2.65	2.63	2.25	2.55	2.70
〃 first anal spine	6.06	5.12	5.65	5.35	6.00	5.10	6.14
〃 second anal spine	2.50	2.53	2.53	2.50	2.57	2.35	2.50
〃 third anal spine	2.85	2.69	2.61	3.00	2.86	2.55	2.70
〃 longest anal ray	1.25	1.40	1.88	2.00	1.68	1.70	1.63

a pair of canines on tip of lower jaw and posteriorly one or two canines on each side; teeth on vomer and palatines in a narrow band of small teeth, the band on vomer triangular in shape; tongue smooth. Preopercle serrated, a serra at angle largest; opercle with three flat spines, middle one longest; subopercle and interopercle serrated. Gill-rakers close-set and very long, the longest one much longer than gill filament; length of longest gill-raker 1.35～1.53 in eye diameter, length of longest gill filament 1.85～2.30. Dorsal inserted above slightly before upper end of gill opening; dorsal without notch, 7th or 8th spine longest; anal originating below base of 2nd dorsal soft ray; second anal spine slightly stronger and longer than the third; tip of anal fin acute; pectoral subsymmetrical, slightly shorter than head length, reaching a vertical through vent; the rays mostly branched; pelvic fin inserted below lower base of pectoral; caudal deeply emarginated, the lobes filamentous; branched rays 13. Scales moderately large, ciliated, 5 in a series from origin of dorsal to lateral line, 3 from middle spinous dorsal to lateral line, and 17 or 18 from origin of anal to lateral line; head closely scaled except lips and throat; spinous dorsal and anal naked; soft dorsal and anal with small scales at base. Lateral line normally curved, nearly concurrent with back and extending along middle of caudal peduncle to base of caudal.

Color of fresh specimens: This species is sexually dichromatic. In male, body red with a dark red vertical band on body side below the base of 8th and 9th dorsal spines; a dark red oblique line from lower margin of eye extending to base of pectoral; pectoral pale red; posterior part

of soft dorsal fin yellow; tip of caudal lobes yellow; anal greenish yellow; pelvic fin red, anterior margin dark red. In female, body orange red; a darkred oblique line from lower margin of eye extending to base of pectoral; tip of caudal lobes red; pectoral and anal pale yellow; anterior margin of pelvic fin dark red.

Sexual dimorphism: Two specimens (ZUMT 54144 and MBM 1016) are male and ZUMT 54144 has a ripe testis with sperm. Five specimens (K5733 and ZUMT 54145～54148) are female and ZUMT 54145 has a ripe ovary. The size sex relationship implies a possible protogynous mode of reproduction like *Sacura margaritacea* and *Franzia squamipinnis*; five mature females 41mm～51 mm SL; two mature males 62 mm and 72 mm. In the male both lobes of caudal, second ray of pelvic fin and fourth ray of soft anal ray somewhat filamentous. When fresh, male body color red with a vertical dark red band on body side; tip of caudal lobes yellow; in the female, body orange red; tip of caudal lobes reds.

Remarks. Tanaka's holotype of *Leptanthias kashiwae,* 116 mm in total length taken from Kashiwa-jima, Kochi Prefecture, is probably a male form. There does not appear to be any significant difference between Tanaka's specimen and the present specimens except for a greater number of gill-rakers on the lower limb (21 instead of 23～25). As Katayama (1960) pointed out, this species agrees with *Anthias taeniatus* Klunzinger from the Red Sea (probably a female form) and is presumed to be a synonym of the latter species, though direct comparison with materials in Red Sea has not yet been made. *Anthias cichlops* of Smith (1951, 1955a, b) from Inhaca Island, Mozambique, and Aldabra agrees well with my specimens and his specimens (total length 75 mm and 80 mm) seem to be male form. Later, Smith (1961) synonymized *Anthias cichlops* with *Anthias taeniatus.*

Acknowledgments

I wish to express my sincere thanks to Mr. Katsumi Suzuki, Tokai University, for his kindness extended to me in various ways. And I am also greatly indebted to Mr. Minoru Asai and Mr. Hajime Masuda for assistance in obtaining materials.

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(2-11-22 Tatara, Hofu 747, Japan)

八丈島および伊豆近海で採集されたカシワハナダイについて

片山　正夫

最近八丈島近海の深さ約 25 m 付近から漁獲された6尾の小形ハナダイが浅井ミノル氏から，また伊豆近海で採集された1尾が益田一氏から送付された．これらの標本は，1918 年田中茂穂博士が高知県柏島から記載した新属新種 *Leptanthias kashiwae* カシワハナダイに相当するものである。本種の形態的特徴を調べた結果，紅海産の *Pseudanthias taeniatus* (Klunzinger) と極めてよく似ており，後者のシノニムと考えられる．本種は雌雄差が顕著で，サクラダイのように雌性先熟型の性転換を行う魚であるようである．

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25 巻の最終号をお届けします．この巻には 43 編の論文が掲載されました．26 巻にはより多くの論文を載せたいと思っています．ご投稿をお待ちしています．十分注意を払っているつもりなのですが，各号の印刷ができ上ったあとでいろいろなミスに気付き，申し訳なく思っております．ミスをなくすよう今後努力いたします．

さて，前号でお知らせした投稿の手引きを以下に掲載いたします．少しでもご参考になれば幸いです．(Y.T.)

訂 正 Errata

魚類学雑誌 25 (3): 表紙と p. 167 の和文要約中の“ウスバノドクロベラ”を“ウスバノドグロベラ”に訂正; p. 217, Table 1 の標本番号“ZUMT 00000....ZUMT 00000”を“ZUMT 54144, MBMI 016, K 5733, ZUMT 54145, ZUMT 54147, ZUMT 54146, ZUMT 54148”に訂正．

Japanese Journal of Ichthyology, 25 (3): 217, Table 1. The listing of catalogue numbers “ZUMT 00000 ....ZUMT 00000” should read “ZUMT 54144, MBMI 016, K 5733, ZUMT 54145, ZUMT 54147, ZUMT 54146, ZUMT 54148.”